



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Permit No. **VA0076520**
Effective Date: **March 8, 2013**
Expiration Date: **February 28, 2018**

**AUTHORIZATION TO DISCHARGE UNDER THE
VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM
AND THE VIRGINIA STATE WATER CONTROL LAW**

In compliance with the provisions of the Clean Water Act as amended and pursuant to the State Water Control Law and regulations adopted pursuant thereto, the following owner is authorized to discharge in accordance with the information submitted with the permit application, and with this permit cover page, and Parts I and Part II of this permit, as set forth herein.

Owner Name: Greenville County Water & Sewer Authority
Facility Name: Jarratt Water Treatment Plant
County: Greenville
Facility Location: 114 S. Allen Road, Jarratt, VA 23867

The owner is authorized to discharge to the following receiving stream:

Stream Name: Chetocric Swamp, UT
River Basin: Chowan River and Dismal Swamp
River Subbasin: Chowan River
Section: 2
Class: III
Special Standards: None

A handwritten signature in blue ink, likely of the Water Permit Manager, positioned above a horizontal line.

Water Permit Manager, Piedmont Regional Office

March 7, 2013

Date

A. Effluent Limitations and Monitoring Requirements**Outfall 001 – Design Average Flow 0.150 MGD**

- a. There shall be no discharge of floating solids or visible foam in other than trace amounts.
- b. During the period beginning with the permit's effective date and lasting until the expiration date the permittee is authorized to discharge from Outfall Number 001. Such discharges shall be limited and monitored by the permittee as specified below.

Parameter	Discharge Limitations				Monitoring Requirements	
	Monthly Average ⁽¹⁾	Daily Maximum ⁽¹⁾	Minimum	Maximum ⁽¹⁾	Frequency	Sample Type
Flow (MGD)	NL	NA	NA	NL	1/M	Estimate
pH	NA	NA	6.0 S.U.	9.0 S.U.	1/M	Grab
Total Suspended Solids	30 mg/L ⁽²⁾	NA	NA	60 mg/L ⁽²⁾	1/M	5G/8HC
Total Residual Chlorine	0.011 mg/L	NA	NA	0.011 mg/L	1/M	Grab
Oil & Grease ⁽³⁾	NA	NA	NA	NL mg/L	1/Q	Grab
Bis-2-ethylhexyl phthalate ⁽⁴⁾	NA	NA	NA	NL µg/L	1/6M	Grab

⁽¹⁾ See Part I.B.

MGD = Million gallons per day.

1/M = Once every month.

⁽²⁾ Limit is expressed in two significant figures

NA = Not applicable.

1/Q = Once every quarter.

⁽³⁾ See Part I.D.9.

NL = No limit; monitor and report.

1/6M = Once every six months.

⁽⁴⁾ See Part I.D.10.

S.U. = Standard units.

5G/8HC = 5 Grab/Eight Hour Composite – Consisting of five (5) grab samples collected at hourly intervals until the discharge ceases or five (5) grab samples taken at equal time intervals for the duration of the discharge if the discharge is less than eight (8) hours in length.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

The quarterly monitoring periods shall be January – March, April – June, July – September and October – December. The DMR shall be submitted no later than the 10th day of the month following the monitoring period.

The semiannual monitoring periods shall be January through June and July through December. The DMR shall be submitted no later than the 10th day of the month following the monitoring period.

B. Quantification Levels and Compliance Reporting

1. Quantification Levels

- a. The quantification levels (QL) shall be less than or equal to the following concentrations:

<u>Characteristic</u>	<u>Quantification Level</u>
Total Suspended Solids	1.0 mg/L
Total Residual Chlorine	0.10 mg/L

- b. The QL is defined as the lowest concentration used to calibrate a measurement system in accordance with the procedures published for the method. The permittee shall use any method in accordance with Part II.A of this permit.
- c. It is the responsibility of the permittee to ensure that proper quality assurance/quality control (QA/QC) protocols are followed during the sampling and analytical procedures. QA/QC information shall be documented to confirm that appropriate analytical procedures have been used and the required QLs have been attained.

2. Compliance Reporting for parameters in Part I.A.

- a. Monthly Average – Compliance with the monthly average limitations and/or reporting requirements for the parameters listed in Part I.B.1.a of this permit condition shall be determined as follows: All concentration data below the QL used for the analysis (QL must be less than or equal to the QL listed in Part I.B.1.a above) shall be treated as zero. All concentration data equal to or above the QL used for the analysis (QL must be less than or equal to the QL listed in Part I.B.1.a above) shall be treated as it is reported. An arithmetic average shall be calculated using all reported data for the month, including the defined zeros. This arithmetic average shall be reported on the Discharge Monitoring Report (DMR) as calculated. If all data are below the QL used for the analysis (QL must be less than or equal to the QL listed in Part I.B.1.a above), then the average shall be reported as "<QL". If reporting for quantity is required on the DMR and the reported monthly average concentration is <QL, then report "<QL" for the quantity. Otherwise use the reported concentration data (including the defined zeros) and flow data for each sample day to determine the daily quantity and report the monthly average of the calculated daily quantities. For monitoring frequencies encompassing multiple months, the monthly average value to be reported on the DMR shall be the maximum of the arithmetic monthly averages calculated for each calendar month during the monitoring period.
- b. Daily Maximum – Compliance with the daily maximum limitations and/or reporting requirements for the parameters listed in subsection a. of this permit condition shall be determined as follows: All concentration data below the QL used for the analysis (QL must be less than or equal to the QL listed in a. above) shall be treated as zero. All concentration data equal to or above the QL used for the analysis (QL must be less than or equal to the QL listed in a. above) shall be treated as reported. An arithmetic average shall be calculated using all reported data, including the defined zeros, collected within each day during the reporting month. The maximum value of these daily averages thus determined shall be reported on the DMR as the Daily Maximum. If all data are below the QL used for the analysis (QL must be less than or equal to the QL listed in a. above), then the maximum value of the daily averages shall be reported as "<QL". If reporting for quantity is required on the DMR and the reported daily maximum is <QL, then report "<QL" for the quantity. Otherwise use the reported daily average concentrations (including the defined zeros) and corresponding daily flows to determine daily average quantities and report the maximum of the daily average quantities during the reporting month. For monitoring frequencies encompassing multiple months, the daily maximum value to be reported on the DMR shall be the maximum of the arithmetic daily averages calculated for each calendar day during the monitoring period.

- c. Single Datum – Any single datum required shall be reported as "<QL" if it is less than the QL used in the analysis (QL must be less than or equal to the QL listed in Part I.B.1.a above). Otherwise the numerical value shall be reported.
- d. Significant Digits – The permittee shall report at least the same number of significant digits as the permit limit for a given parameter. Regardless of the rounding convention used (i.e., 5 always rounding up or to the nearest even number) by the permittee, the permittee shall use the convention consistently and shall ensure that consulting laboratories employed by the permittee use the same convention.

C. Whole Effluent Toxicity (WET) Program Requirements

1. Biological Monitoring

- a. In accordance with the schedule in Part I.C.2. below, the permittee shall conduct semiannual acute and chronic toxicity tests during this permit term. The permittee shall collect 24-hour flow-proportioned composite samples of final effluent from Outfall 001.

The acute tests to use are:

48-Hour Static Acute test using *Ceriodaphnia dubia*

48-Hour Static Acute test using *Pimephales promelas*

The acute test shall be conducted using five (5) geometric dilutions of effluent with a minimum of four (4) replicates, with five (5) organisms in each. The 'No Observed Adverse Effect Concentration' (NOAEC) as determined by hypothesis testing shall be reported on the WET test report. Tests in which control survival is less than 90% are not acceptable.

The chronic tests to use are:

Chronic 3-Brood Static Renewal Survival and Reproduction Test using *Ceriodaphnia dubia*

Chronic 7-Day Static Renewal Survival and Growth Test using *Pimephales promelas*

These chronic tests shall be conducted in such a manner and at sufficient dilutions (minimum of five dilutions) to determine the "No Observed Effect Concentration" (NOEC) for survival and reproduction or growth. Results which cannot be quantified (i.e., a "less than" NOEC value) are not acceptable and a retest will have to be performed. The NOEC as determined by hypothesis testing shall be converted to TU_c (Chronic Toxic Units) for WET test reporting where $TU_c = 100/NOEC$. Report the LC_{50} at 48 hours and the IC_{25} with the NOEC's in the test report.

- b. The permittee may provide additional samples to address data variability. These data shall be reported. Test procedures and reporting shall be in accordance with the WET testing methods cited in 40 CFR 136.3.
- c. The test dilutions shall be able to determine compliance with the following endpoints:

Acute NOAEC = 100%

Chronic NOEC \geq 69%; equivalent to a $TU_c \leq 1.44$

- d. The test data will be evaluated statistically for reasonable potential at the conclusion of the test period. The data may be evaluated sooner if requested by the permittee or if toxicity has been noted. Should evaluation of the data indicate that a limit is warranted, a WET limit and compliance schedule may be required.

- e. The permit may be modified or revoked and reissued to include pollutant specific limits in lieu of a WET limit should it be demonstrated that toxicity is due to specific parameters. The pollutant specific limitation shall control the toxicity of the effluent.

2. Reporting Schedule

The permittee shall report the results specified in Part I.C.1 on the semiannual WET test report and submit two (2) copies of the report to the DEQ-PRO in accordance with the following schedule:

Period	Sampling Period	Report Submission Dates
Semiannual 1	July 1, 2013 – December 31, 2013	January 10, 2014
Semiannual 2	January 1, 2014 – June 30, 2014	July 10, 2014
Semiannual 3	July 1, 2014 – December 31, 2014	January 10, 2015
Semiannual 4	January 1, 2015 – June 30, 2015	July 10, 2015
Semiannual 5	July 1, 2015 – December 31, 2015	January 10, 2016
Semiannual 6	January 1, 2016 – June 30, 2016	July 10, 2016
Semiannual 7	July 1, 2016 – December 31, 2016	January 10, 2017
Semiannual 8	January 1, 2017 – June 30, 2017	July 10, 2017

D. **Other Requirements and Special Conditions**

1. Operation and Maintenance (O&M) Manual Requirement

The permittee shall maintain a current Operations and Maintenance (O&M) Manual for the treatment works that is in accordance with Virginia Pollutant Discharge Elimination System Regulations, 9VAC25-31. The O&M Manual and subsequent revisions shall include the manual effective date and meet Part II.K.2 and Part II.K.4 Signatory Requirements of the permit. Any changes in the practices and procedures followed by the permittee shall be documented in the O&M Manual within 90 days of the effective date of the changes. The permittee shall operate the treatment works in accordance with the O&M Manual and shall make the O&M manual available to Department personnel for review during facility inspections. Within 30 days of a request by DEQ, the current O&M Manual shall be submitted to the DEQ Piedmont Regional Office (DEQ-PRO) for review and approval.

The O&M Manual shall detail the practices and procedures which will be followed to ensure compliance with the requirements of this permit. This manual shall include, but not necessarily be limited to, the following items, as appropriate:

- a. Permitted outfall locations and techniques to be employed in the collection, preservation and analysis of effluent, storm water and sludge samples;
- b. Procedures for measuring and recording the duration and volume of treated wastewater discharged;
- c. Discussion of Best Management Practices, if applicable;
- d. Procedures for handling, storing and disposing of all wastes, fluids and pollutants characterized in Part I.D.3 that will prevent these materials from reaching state waters. List type and quantity of wastes, fluids and pollutants (e.g. chemicals) stored at this facility;
- e. Discussion of treatment works design, treatment works operation, routine preventative maintenance of units within the treatment works, critical spare parts inventory and record keeping;
- f. Plan for the management and/or disposal of waste solids and residues;

- g. Hours of operation and staffing requirements for the plant to ensure effective operation of the treatment works and maintain permit compliance;
- h. List of facility, local and state emergency contacts; and
- i. Procedures for reporting and responding to any spills.

2. Notification Levels

The permittee shall notify the Department as soon as they know or have reason to believe:

- a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following notification levels:
 - (1) One hundred micrograms per liter;
 - (2) Two hundred micrograms per liter for acrolein and acrylonitrile; five hundred micrograms per liter for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter for antimony;
 - (3) Five times the maximum concentration value reported for that pollutant in the permit application; or
 - (4) The level established by the Board.
- b. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant, which is not limited in this permit, if that discharge will exceed the highest of the following notification levels:
 - (1) Five hundred micrograms per liter;
 - (2) One milligram per liter for antimony;
 - (3) Ten times the maximum concentration value reported for that pollutant in the permit application; or
 - (4) The level established by the Board.

3. Materials Handling/Storage

Any and all product, materials, industrial wastes, and/or other wastes resulting from the purchase, sale, mining, extraction, transport, preparation, and/or storage of raw or intermediate materials, final product, by-product or wastes, shall be handled, disposed of, and/or stored in such a manner and consistent with Best Management Practices so as not to permit a discharge of such product, materials, industrial wastes, and/or other wastes to State waters, except as expressly authorized.

4. Water Quality Criteria Monitoring

The permittee shall monitor the effluent at Outfall 001 for the substances noted in Attachment A, "Water Quality Criteria Monitoring" according to the indicated analysis number, quantification level, sample type and frequency. Monitoring shall be initiated after the start of the third year from the permit's effective date. Using Attachment A as the reporting form, the data shall be submitted with the next application for reissuance, which is due at least 180 days prior to the expiration date of this permit. Monitoring and analysis shall be conducted in accordance with 40 CFR Part 136 or alternative EPA approved methods. It is the responsibility of the permittee to ensure that proper QA/QC protocols are followed during the sample gathering and analytical procedures. The DEQ-PRO will use these data for making specific permit decisions in the future. This permit may be modified or, alternatively, revoked and reissued to incorporate limits for any of the substances listed in Attachment A.

5. Total Maximum Daily Load (TMDL) Reopener

This permit shall be modified or alternatively revoked and reissued if any approved wasteload allocation procedure, pursuant to Section 303(d) of the Clean Water Act, imposes wasteload allocations, limits or conditions on the facility that are not consistent with the permit requirements.

6. Treatment Works Closure Plan

If the permittee plans an expansion or upgrade to replace the existing treatment works, or if the facility is permanently closed, the permittee shall submit to the DEQ-PRO a closure plan for the existing treatment works. The plan shall address the following information as a minimum: Verification of elimination of sources and/or alternate treatment scheme; treatment, removal and final disposition of residual wastewater and solids; removal/demolition/disposal of structures, equipment, piping and appurtenances; site grading, and erosion and sediment control; restoration of site vegetation; access control; fill materials; and proposed land use (post-closure) of the site. The plan should contain proposed dates for beginning and completion of the work. The plan shall be approved by the DEQ-PRO prior to implementation. The permittee shall sample once for each foot of drawdown, and when the discharge no longer meets permit limits, the discharge shall cease and the rest of the contents of the lagoon shall be pumped and hauled to another, permitted facility for treatment and disposal. Once approved, the plan shall become an enforceable part of this permit and closure shall be implemented in accordance with the approved plan. No later than 14 calendar days following closure completion, the permittee shall submit to the DEQ-PRO written notification of the closure completion date and a certification of closure in accordance with the approved plan.

7. Groundwater Monitoring

The permittee shall continue monitoring in accordance with the approved groundwater monitoring plan with the following modifications: monitoring requirements for aluminum, sulfate and total suspended solids have been removed while analysis and reporting for chloroform has been added. The approved plan is an enforceable part of the permit.

Any proposed changes to the plan, with the exception of those mentioned above, shall be submitted to DEQ-PRO for approval.

8. Corrective Action Plan (CAP)

The permittee shall submit to DEQ-PRO for review and approval a corrective action plan within 90 days of the effective date of this permit. This plan shall set forth, at a minimum, the steps necessary to reestablish the capacity and optimal utilization of both treatment lagoons and a liner integrity assessment, including the possible installation of synthetic liner material during this permit term. Once approved, this plan shall be incorporated into the permit by reference and become an enforceable part of this permit.

9. Oil & Grease Monitoring

The permittee shall monitor and report oil and grease on a quarterly basis for one year following the effective date of the permit. If all monitoring results (4 samples) are reported at or below 15 mg/L, the permittee may submit to DEQ-PRO, for review and approval, a written request to cease further oil and grease monitoring. Upon receipt of DEQ-PRO written approval, the permittee will be relieved of the oil and grease monitoring requirements detailed in Part I.A and Part I.D.9 of this permit.

If, however, any of the results are greater than 15 mg/L, the permittee shall continue quarterly monitoring, shall investigate for a possible source(s) and shall submit to DEQ-PRO for review and approval an O&G minimization plan detailing the steps with an implementation schedule to be initiated for the minimization or elimination of the source of oil and grease. This plan shall be due no later than July 10, 2014. Once approved, this plan shall be incorporated into the permit by reference, become an enforceable part of this permit, and be implemented in accordance with the approved plan.

When monitoring indicates that oil and grease is at or below 15 mg/L for four (4) consecutive sampling events subsequent to implementing the approved plan for the minimization or elimination of the source(s), the permittee may request DEQ-PRO approval to cease further oil and grease monitoring as detailed herein. Upon receipt of DEQ-PRO written approval, the permittee will be relieved of the oil and grease monitoring requirements detailed in Part I.A and Part I.D.9 of this permit.

10. Bis-2-ethylhexyl phthalate Monitoring

The permittee shall monitor and report bis-2-ethylhexyl phthalate on a semiannual basis for a period of two years (four sampling events). If all monitoring results are reported at or below 22 µg/L, the permittee may submit to DEQ-PRO, for review and approval, a written request to cease further bis-2-ethylhexyl phthalate monitoring. Upon receipt of DEQ-PRO written approval, the permittee will be relieved of bis-2-ethylhexyl phthalate monitoring requirements detailed in Part I.A and Part I.D.10 of this permit.

If, however, any of the results are greater than 22 µg/L, the permittee shall continue semiannual monitoring, shall investigate for a possible source(s) and shall submit to DEQ-PRO for review and approval a bis-2-ethylhexyl phthalate minimization plan detailing the steps and implementation schedule to be initiated for the minimization or elimination of the source of bis-2-ethylhexyl phthalate present in the effluent. This plan shall be due no later than April 10, 2016. Once approved, this plan shall be incorporated into the permit by reference, become an enforceable part of this permit, and be implemented in accordance with the approved plan.

When monitoring consistently indicates that bis-2-ethylhexyl phthalate is at or below 22 µg/L for four (4) consecutive sampling events subsequent to implementing the approved plan for the minimization or elimination of the source(s), the permittee may request DEQ-PRO approval to cease further bis-2-ethylhexyl phthalate monitoring as detailed herein. Upon receipt of DEQ-PRO written approval, the permittee will be relieved of bis-2-ethylhexyl phthalate monitoring requirements detailed in Part I.A and Part I.D.10 of this permit.